STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0131229
Owner:	Stoneridge Farms Development, LLC
Address:	55 Liberty Ridge Court, Moscow Mills, MO 63362
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Stoneridge Farms Subd.
Facility Address:	S. Ethlyn Road, Moscow Mills, MO 63362
Legal Description:	SE ¼, SE ¼, Sec. 30, T49N, R2E, Lincoln County
Receiving Stream:	Bob's Creek (P)
First Classified Stream and ID:	Bob's Creek (P)(ID # 0035)
USGS Basin & Sub-watershed No.:	(07110004-230005)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 – SUBP - SIC # 4952
Gravity/STEP collection system/Bioclere trickling filter/subsurface effluent disposal.
Design population equivalent is 182.
Design flow is 12,000 gpd.
Design sludge production is 1.3 dry tons/year.

See page 2 for land disposal information.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

November 4, 2005
Effective Date

Doyle Childers, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

November 3, 2010
Expiration Date

Mohamad Alhalabi, P.E., Director, St. Louis Regional Office

FACILITY DESCRIPTION (continued)

Outfall #001 – Land Application System Design:

Irrigation volume per year:	4,380,000 gallons
Primary Irrigation area:	42,240 sq. ft. (0.97 acre)
Reserve irrigation area:	42,000 sq. ft. (0.97 acre)
Application rates per acre:	0.46 inch/day; 166 inches/year
Field slopes:	Less than 3.0 percent
Equipment type:	Subsurface Irrigation
Vegetation:	Cool season grass
Application rate is based on:	The estimated nitrogen removal by the grass cover crop is such that the concentration of nitrate nitrogen in the water that percolates down into the groundwater will be less than the standard of 10.0 mg/L.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 3 of 5
	PERMIT NUMBER MO-0131229

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
MONITORING WELLS (ALL)						
Up-Gradient Monitoring Wells						
Ammonia as N	mg/L	*		*	Once/quarter	grab
Total Kjeldahl Nitrogen as N	mg/L	*		*	Once/quarter	grab
Nitrate plus Nitrite as N	mg/L	*		*	Once/quarter	grab
Fecal Coliform	#/100mL					
Down-Gradient Monitoring Wells		*		*	Once/quarter	grab
Ammonia as N	mg/L	*		*	Once/quarter	grab
Total Kjeldahl Nitrogen as N (TKN)	mg/L	*		*	Once/quarter	grab
Nitrate plus Nitrite as N	mg/L	10 mg/L		10 mg/L	Once/quarter	grab
Fecal Coliform	#/100 mL	*		*	Once/quarter	grab
IN-STREAM MONITORING * **						
Flow	mg/L	*		*	Once/quarter	**
Dissolved Oxygen	mg/L	*		*	Once/quarter	grab
Temperature	°C	*		*	Once/quarter	grab
pH	SU	*		*	Once/quarter	grab
Ammonia as N	mg/L	*		*	Once/quarter	grab
Nitrate + Nitrite as N	mg/L	*		*	Once/quarter	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JAN 28, 2005. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)

* Monitoring requirement only.

** Estimate as product of average velocity (as determined by a minimum of three measurements across the channel) by the average depth multiplied by the channel width multiplied by 0.9 for a smooth bottom or 0.8 for a rough bottom.

*** In-stream monitoring shall be conducted as follows. Upstream samples shall be collected upstream from the disposal field in order to collect samples which are not contaminated by subsurface recharge or base flow. The downstream sample shall be collected downstream of the disposal field location and no further downstream than the South Ethylyn Road bridge. The in-stream samples shall not be collected during high stream flow periods and in general should not be collected within five days of the last significant rainfall event.

3. SPECIAL CONDITIONS

1. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
   a. Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
   b. Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
   c. Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
   d. Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
   e. There shall be no significant human health hazard from incidental contact with the water
   f. There shall be no acute toxicity to livestock or wildlife watering;
   g. Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
   h. Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

2. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   a. Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
   b. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
   c. controls any pollutant not limited in the permit.
   d. Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri’s Water Quality Standards.Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri’s list of waters of the state not fully achieving the state’s water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

3. Changes in Discharges of Toxic Substances. The permittee shall notify the Director as soon as it knows or has reason to believe:
   a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
      (1) One hundred micrograms per liter (100 µg/L);
      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
      (4) The level established in Part A of the permit by the Director.
   b. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

D. SPECIAL CONDITIONS (Continued)

4. Prior to wastewater treatment facility or irrigation field operation, the permittee shall develop an irrigation field management plan. This plan shall be submitted to the department prior to issuance of this permit. Once approved the plan shall be implemented. This plan shall contain the following elements:

   a. Location and monitoring frequency of lysimeters to monitor soil water for nitrate nitrogen. This will aid in determining nutrient movement through the soil, serve as an early warning system for potential nitrate nitrogen break through into surface water or groundwater, and will aid in resizing the irrigation field for this and subsequent phases.

   b. Location and monitoring frequency of piezometers. This will aid in determining the groundwater level, serve as an early warning system for potential groundwater mounding problems, and will aid in resizing the irrigation field for this and subsequent phases.

   c. Application rates and schedules for soil amendments based on soil tests for both the warm season and cool season grass plots.

   d. Initial and annual soil testing of phosphorus and nitrogen in the soil layer below the bottom of the root zone down to the water saturation level for the different soil types in both the warm season and cool season grass plots. This will aid in determining nitrogen movement through the soil, serve as an early warning system for nitrogen break through into surface water or groundwater, and will aid in resizing the irrigation field for this and subsequent phases.

   e. Seasonal irrigation schedules for both the warm season and cool season grass plots, including allowances for field drying prior to harvest and allowances for hay harvesting, including mowing / conditioning, hay drying, raking, baling, and bale removal.

   f. Periodic (minimum once each business day) measurement of precipitation.

   g. Measurement of weight of both warm season and cool season hay removed annually with analysis (or estimate if more appropriate) of nitrogen, phosphorus, and potassium (as well as minor nutrients if appropriate) removed from the irrigation plots in the hay.

   h. Annual report submitted to the department that analyzes trends in nitrogen movement though the soil, soil water, groundwater, and surface water and includes a material balance for water, phosphorus, and nitrogen considering wastewater irrigated, precipitation, soil water and nutrients stored in the root zone, soil water and nutrients stored below the root zone, groundwater movement, surface water movement, evaporation, transpiration, and hay harvested.